



Nagindas Khandwala College (Autonomous)

Name of the Programme: Masters in Geography Programme Code : PMAGEO

PROGRAMME OBJECTIVES

PO-1: Learners will be able to memorize the basic concepts in climatology, landforms, geomorphic process, oceanography, hydrology, health care and research in the discipline of Geography.

PO – 2: Learners will be able to describe the different perspectives in human and social Geography and economic activities.

PO- 3: Learners will be able to demonstrate the urbanization and urban systems and spatial distribution of labour.

PO-4: Learners will be able to determine techniques of remote sensing like electromagnetic spectrum, aerial photography remote sensing and GIS.

PO-5: Learners will be able to create, evaluate, interpret and analyse geographic and statistical techniques to analyse spatial pattern and will be able to compile a research report.

PO –6: Learners will be able to interpret environmental degradation and will be able to access methods of environmental conservation and sustainability.

PROGRAMME OUTCOMES

After completing two years of Masters in Geography (MA) program, the learners will:

PO-1: To memorize the basic concepts in climatology, landforms, geomorphic process, oceanography, hydrology, health care and research in the discipline of Geography.

PO – 2: To describe the different perspectives in human and social Geography and economic activities.

PO- 3: To demonstrate the urbanization and urban systems and spatial distribution of labour.

PO-4: To determine techniques of remote sensing like electromagnetic spectrum, aerial photography remote sensing and GIS.

PO-5: To create, evaluate, interpret and analyse geographic and statistical techniques to analyse spatial pattern and will be able to compile a research report.

PO –6: To interpret environmental degradation and will be able to access methods of environmental conservation and sustainability.



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Semester 1

101: Principles of Geomorphology

1611PGEFG

Course Objectives:

1. To recognize the various landforms on the Earth
2. To explain the reasons behind the present shape of the planet
3. To apply the theory of landscape development to the present topographical conditions
4. To distinguish between the landform and processes responsible behind them
5. To develop an understanding about the geomorphological processes acting upon the earth and its impacts on mankind
6. To compare between theories of development and draw conclusions

Course Outcome:

1. CO1: Learners will be able to recognize the various landforms on the Earth (Level : Knowledge)
2. CO 2: Learners will be able to explain the reasons behind the present shape of the planet (Level: Comprehension)
3. CO 3: Learners will be able to apply the theory of landscape development to the present topographical conditions (Level: Application)
4. CO 4: Learners will be able to distinguish between the landform and processes responsible behind them (Level : Analysis)
5. CO 5: Learners will be able to develop an understanding about the geomorphological processes acting upon the earth and its impacts on mankind (Level : Synthesis)
6. CO 6: Learners will be able to compare between theories of development and draw conclusions (Level : Evaluation)

102: Principles of Climatology

1612PGEPC

Course Objectives:

1. To memorize the basic concepts in climatology
2. To classify the regions based on the spatial distribution of temperature
3. To apply their understanding on the distribution of atmospheric pressure and types of winds
4. To associate the origin of monsoon with climatic variations
5. To compare the concepts of air masses, fronts and cyclones
6. To assess the classification of climate by Thorntwaite and Koppen in depth

Course Outcome:



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1. CO 1: Learners will be able to memorize the basic concepts in climatology in depth (Level : Knowledge)
2. CO 2: Learners will be able to classify the regions-based differences in temperature (Level : Comprehension)
3. CO 3: Learners will be able to apply their understanding on the distribution of atmospheric pressure and types of winds all over the globe (Level : Application)
4. CO 4: Learners will be able to associate the origin of monsoon with climatic variations and its impacts on mankind (Level : Analysis)
5. CO 5: Learners will be able to compare the concepts of air masses, fronts and cyclones and their prediction (Level : Synthesis)
6. CO 6 :Learners will be able to assess the classification of climate by Thorntwaite and Koppén in depth for better understanding of global climate (Level : Comprehension)

103: Perspectives in Human Geography

1613PGESP

Course Objectives:

1. To recognize the different perspectives in human geography
2. To illustrate the evolution of human societies with respect to rural and urban dynamics
3. To predict how different societies interact and depend on each other for existence and affect landscapes
4. To estimate the factors responsible for growth and changes in structure of population
5. To develop an understanding of the global patterns of migration
6. To compare the different urban morphologies in the world

Course Outcome:

1. CO1: Learners will be able to recognize the different perspectives in human Geography and related aspects (Level : Knowledge)
2. CO 2: Learners will be able to illustrate the evolution of human societies with respect to rural and urban dynamics (Level : Comprehension)
3. CO 3: Learners will be able to predict how different societies interact and depend on each other for existence and affect landscapes (Level : Application)
4. CO 4: Learners will be able to estimate the factors responsible for growth and changes in structure of population (Level : Analysis)
5. CO 5 :Learners will be able to develop an understanding of the global patterns of migration (Level : Synthesis)
6. CO 6: Learners will be able to compare the different urban morphologies in the world (Level : Synthesis)



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Paper 104: Spatial Organisation of Economic Activities

1614PGEEA

Course Objectives:

1. To identify different economic systems
2. To describe the spatial distribution of economic activities
3. To apply the various economic theories to the present economic organization
4. To determine the spatio social organization of production and patterns of trade
5. To compare the past and present changes in the process of industrialization
6. To assess the barriers to economic development and its impacts on spatial interactions

Course Outcome:

1. CO 1: Learners will be able to recall the definition, nature and scope of economic geography (Level : Knowledge)
2. CO 2: Learners will be able to illustrate the different perspectives of the subject (Level : Comprehension)
3. CO 3: Learners will be able to modify the patterns and reasons of the existing spatial distribution of labour and economic activities (Level : Application)
4. CO 4: Learners will be able to distinguish between the roles of different agencies like WTO, GATT, TRIPS, SAARC etc. in international trade (Level : Analysis)
5. CO 5: Learners will be able design locations for industrial establishments (Level : Synthesis)
6. CO 6: Learners will be able to compare the industrial location theories given by Losch, Myrdal, etc. (Level : Evaluation)

105: Tools and Techniques of Spatial Analysis I

1615PGESA

(Based on Theory Papers: 101 -102)

Course Objectives:

1. To identify geomorphic profiles of the given area
2. To illustrate the slopes of the area under study
3. To compute climate data of different regions
4. To differentiate between Indian and foreign toposheets
5. To construct diagrams to analyze climate data
6. To compare different methods of geographic data analysis

Course Outcome:



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1. CO 1: Learners will be able to identify the techniques of drawing longitudinal and projected profiles (Level: Knowledge)
2. CO 2: Learners will be able to describe the methods of slope analysis like Wentworth's, Robinson's, and Smith's (Level : Comprehension)
3. CO 3: Learners will be able to apply the methods of altimetric analysis like ring contour method and highest grid cell elevation method (Level : Application)
4. CO 4: Learners will be able to differentiate between Indian and foreign topographical maps (Level : Analysis)
5. CO 5: Learners will be able to construct different climate graphs, maps and diagrams (Level : Application)
6. CO 6: Learners will be able to compare different methods of geographic data analysis (Level : Evaluation)

106: Tools and Techniques of Spatial Analysis II

1616PGESA

(Based on Theory Papers: 103 -104)

Course Objectives:

1. To learn measures of central tendency like weighted mean and median center
2. To illustrate network analysis through its associated mapping
3. To construct diagrams for spatial data representation
4. To analyze the socio-economic conditions through a properly designed questionnaire
5. To develop understanding of computer processing of geographic data
6. To assess the different sources of data

Course Outcome:

1. CO 1: Learners will be able to learn measures of central tendency like weighted mean and median center (Level : Learn)
2. CO 2: Learners will be able to illustrate network analysis through its associated mapping (Level : Comprehension)
3. CO 3: Learners will be able to construct diagrams for spatial data representation (Level : Synthesis)
4. CO 4: Learners will be able to analyze the socio-economic conditions through a properly designed questionnaire (Level : Analysis)
5. CO 5: Learners will be able to develop understanding of computer processing of geographic data (Level : Synthesis)
6. CO 6: Learners will be able to assess the different sources of data (Level : Evaluation)

Semester 2

201: Oceanography and Hydrology

1621PGEOH



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Course Objectives:

1. To define the basic concepts related to oceanography
2. To illustrate formation and role of ocean currents and ocean resources
3. To apply the understandings of concepts of hydrology to the real world
4. To associate the concepts of watershed with water scarcity in the present era
5. To construct salinity, ocean current and temperature distribution maps
6. To compare the marine conditions across various oceans in the world

Course Outcome:

1. CO 1: Learners will be able to define the basic concepts related to oceanography like definition, nature and scope (Level: Knowledge)
2. CO 2: Learners will be able to illustrate formation and role of ocean currents and ocean resources in influencing global temperature (Level : Comprehension)
3. CO 3: Learners will be able to apply the understandings of concepts related to the hydrological cycle to the real world (Level : Application)
4. CO 4: Learners will be able to associate the concepts of watershed with water scarcity in the present era with reference to one's own area (Level : Analysis)
5. CO 5: Learners will be able to construct salinity, ocean current and temperature distribution maps for better understanding of spatial distribution (Level : Synthesis)
6. CO 6: Learners will be able to compare the marine conditions across various oceans in the world (Level :Synthesis)

202: Geoinformatics

1622PGEIF

Course Objectives:

1. To define the fundamental concepts of remote sensing
2. To explain the various remote sensing platforms and sensors
3. To construct spatial data models in GIS
4. To associate GIS with GPS
5. To compare between satellite imageries, aerial photographs, and GIS outputs
6. To justify the reasons for the existing land uses from the imageries, photographs and other maps

Course Outcome:

1. CO 1: Learners will be able to define the fundamental concepts of remote sensing like electromagnetic spectrum, aerial photography, principles of photogrammetry, etc. (Level : Knowledge)



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2. CO 2: Learners will be able to explain the various remote sensing platforms and sensors, basics of projections, datum and coordinate reference system (Level : Comprehension)
3. CO 3: Learners will be able to construct spatial data models in gis for solution modeling (Level : Synthesis)
4. CO 4: Learners will be able to associate gis with GPS and work with them together (Level : Analysis)
5. CO 5: Learners will be able to compare between satellite imageries, aerial photographs, and gis outputs for better results (Level : Synthesis)
6. CO 6: Learners will be able to justify the reasons for the existing land uses from the imageries, photographs and other maps (Level : Evaluation)

203: Socio-Cultural and Political Geography

1623PGECP

Course Objectives:

1. To identify the different perspectives in Social Geography
2. To summarize the concepts of marginalization and exclusion
3. To modify the traditional gender roles in the society
4. To determine the spatial dynamics of political processes
5. To develop understanding of urbanization processes globally
6. To judge the differences in society and related aspects

Course Outcome:

1. CO 1: Learners will be able to identify the different perspectives in social geography and the trends and approaches (Level : Knowledge)
2. CO 2 :Learners will be able to summarize the concepts of marginalization and exclusion (Level : Comprehension)
3. CO 3: Learners will be able to modify the traditional gender roles in the society like working women, transgender and female literacy (Level : Application)
4. CO 4: Learners will be able to determine the spatial dynamics of political processes (Level : Analysis)
5. CO 5: Learners will be able to develop understanding of urbanization processes globally ad in India (Level : Comprehension)
6. CO 6: Learners will be able to judge the differences in society and related aspects like boundary (Level : Evaluation)

204: Urban Geography

1624PGEUG



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Course Objectives:

1. To name the process of urbanization and urban systems
2. To interpret interconnection between urbanization, capitalism, and development
3. To apply the various perspectives on urban planning (Local development needs)
4. To associate urban transformation and changing socio-economic and environmental conditions
5. To develop a solution model to minimize the impacts
6. To compare the process of urbanization among different places on Earth

Course Outcome:

1. CO 1: Learners will be able to name the process of urbanization and urban systems (Level : Knowledge)
2. CO 2: Learners will be able to interpret interconnection between urbanization, capitalism, and development (Level : Comprehension)
3. CO 3: Learners will be able to apply the various perspectives on urban planning (Level : Application)
4. CO 4: Learners will be able to associate urban transformation and changing socio-economic and environmental conditions (Level : Analysis)
5. CO 5: Learners will be able to develop a solution model to minimize the impacts (Level : Synthesis)
6. CO 6: Learners will be able to compare the process of urbanization among different places on earth (Level : Evaluation)

205: Tools and Techniques of Spatial Analysis III

1625PGESA

Course Objectives:

1. To memorize the essentials of image processing
2. To illustrate the various techniques of map making
3. To prepare a perfect map layout
4. To analyze spatial database by overlaying several layers
5. To create various vector layers in the GIS software
6. To compare between the map and the real world

Course Outcome:

1. CO 1: Learners will be able to memorize the essentials of image processing like identifying the objects, stereo vision, etc. (Level : Knowledge)
2. CO 2: Learners will be able to illustrate the various techniques of map making like tracing and digitization from the imagery/ photograph (Level : Comprehension)
3. CO 3: Learners will be able to prepare a perfect map layout in the GIS software (Level : Application)



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4. CO 4: Learners will be able to analyze spatial database by overlaying several layers (Level : Analysis)
5. CO 5: Learners will be able to create various vector layers in the GIS software point, line, polygon (Level : Synthesis)
6. CO 6: Learners will be able to compare between the map and the real world with the help of area and distance calculation (Level : Evaluation)

206: Tools and Techniques of Spatial Analysis IV Based on Theory Papers: (203-204)

1626PGESA

Course Objectives:

1. To memorize the various techniques of map making
2. To describe the techniques of population hierarchy and population
3. To demonstrate the art of making mental maps and diagrams
4. To analyze the statistical techniques to analyze spatial pattern
5. To compute spatial concentration indices
6. To justify the existing spatial patterns in the world

Course Outcome:

1. CO 1: Learners will be able to memorize the various techniques of map making (Level : Knowledge)
2. CO 2 :Learners will be able to describe the techniques of population hierarchy and population (Level : Comprehension)
3. CO 3: Learners will be able to demonstrate the art of making mental maps and diagrams (Level : Application)
4. CO 4: Learners will be able to analyze the statistical techniques to analyze spatial pattern (Level : Synthesis)
5. CO 5: Learners will be able to compute spatial concentration indices (Level : Application)
6. CO 6: Learners will be able to justify the existing spatial patterns in the world (Level : Evaluation)

Semester 3

301: Research Methodology in Geography

1731PGERM

Course Objectives:

1. To acknowledge students with the basics of research and its methodology
2. To interpret the results with the help of research hypothesis and its testing



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3. To compute and analyze geographic data
4. To distinguish between the different levels of measurement
5. To compile a research report
6. To justify the research with the help of statistical measures

Course Outcome:

1. CO 1: Learners will be able to acknowledge students with the basics of research and its methodology (Level : Knowledge)
2. CO 2: Learners will be able to interpret the results with the help of research hypothesis and its testing (Level : Comprehension)
3. CO 3: Learners will be able to compute and analyze geographic data (Level : Application)
4. CO 4: Learners will be able to distinguish between the different levels of measurement (Level : Analysis) (Local development skills)
5. CO 5: Learners will be able to compile a research report (Level : Synthesis)
6. CO 6: Learners will be able to justify the research with the help of statistical measures (Level : Evaluation)

302 - Climatology of the Tropics

1732PGECT

Course Objectives:

1. To identify the basics of climatology of tropics
2. To summarize the atmospheric conditions of tropics
3. To compute the indices of climate of tropics
4. To determine the reasons behind tropical disturbances
5. To develop a heat budget of an area
6. To appraise the reasons behind cyclones all over the globe

Course Outcome:

1. CO 1: Learners will be able to identify the basics of climatology of tropics like El Nino, and heat budget (Level : Knowledge)
2. CO 2: Learners will be able to summarize the atmospheric conditions of tropics like stability, instability, air masses, fronts and their impacts on weather (Level : Comprehension)
3. CO 3: Learners will be able to compute the indices of climate of tropics (Level: Application)



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4. CO 4: Learners will be able to determine the reasons behind tropical disturbances (Level : Analysis) (Local development needs)
5. CO 5: Learners will be able to develop a heat budget of an area (Level : Synthesis)
6. CO 6: Learners will be able to appraise the reasons behind cyclones all over the globe (Level : Evaluation)

303 - Geography of South Asia with Special Reference to India

1733PGESA

Course Objectives:

1. To recognize the physiographic aspects of South Asia
2. To describe the historical context which led to organization of society
3. To produce difference between pre-colonial, colonial and post-colonial economic ideologies
4. To analyze the organization of economy in South Asia
5. To compare the geopolitical and intra-regional relations and development in different countries
6. To assess the existing trade patterns and its impact on mankind and economy

Course Outcome:

1. CO 1: Learners will be able to recognize the physiographic aspects of South Asia like geology, drainage, climate and soil (Level : Knowledge)
2. CO 2: Learners will be able to describe the historical context which led to organization of society (Level : Comprehension)
3. CO 3: Learners will be able to produce difference between pre-colonial, colonial and post-colonial economic ideologies (Level : Application)
4. CO 4: Learners will be able to analyze the organization of economy in South Asia (Level : Analysis)
5. CO 5: Learners will be able to compare the geopolitical and intra-regional relations and development in different countries (Level : Synthesis)
6. CO 6: Learners will be able to assess the existing trade patterns and its impact on mankind and economy (Level : Evaluation)

304: Tools and Techniques of Spatial Analysis V

1734PGETT

Course Objectives:

1. To select the appropriate quantitative analysis technique using SPSS
2. To classify environmental indicators and understand their importance



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3. To compute environmental data collected from a field survey
4. To differentiate between the statistical techniques like chi-square, ANOVA, correlation and regression
5. To compile a field study report
6. To justify the results obtained from environmental research

Course Outcome:

1. CO 1: Learners will be able to select the appropriate quantitative analysis technique using SPSS to test the data (Level : Knowledge)
2. CO 2: Learners will be able to classify environmental indicators and understand their importance in real world (Level : Comprehension)
3. CO 3: Learners will be able to compute environmental data collected from a field survey and process it (Level : Application)
4. CO 4: Learners will be able to differentiate between the statistical techniques like chi-square, ANOVA, correlation and regression used for testing hypothesis (Level : Analysis)
5. CO 5: Learners will be able to compile a field study report (Level : Synthesis)
6. CO 6: Learners will be able to justify the results obtained from environmental research (Level : Evaluation)

305: Tools and Techniques of Spatial Analysis VI

1735PGETT

Course Objectives:

1. To recall the techniques interpreting O.S. sheets and topographical maps
2. To illustrate their observations in the toposheets and thematic maps
3. To apply statistical measures in spatial analysis in development studies
4. To estimate levels of development through Rank, Quartile and Z score methods
5. To development maps with the help of geographic data related to indicators of development
6. To assess the reasons behind the different levels of development

Course Outcome:

1. CO 1: Learners will be able to recall the techniques interpreting O.S. sheets and topographical maps to understand the landscape (Level : Knowledge)
2. CO 2: Learners will be able to illustrate their observations in the top sheets and thematic maps with the help of sketches and interpretation (Level : Comprehension)
3. CO 3: Learners will be able to apply statistical measures in spatial analysis in development studies (Level : Application)
4. CO 4: Learners will be able to estimate levels of development through rank, quartile and z score methods (Level : Analysis)



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5. CO 5: Learners will be able to development maps with the help of geographic data related to indicators of development (Level : Synthesis)
6. CO 6: Learners will be able to assess the reasons behind the different levels of development (Level : Evaluation)

Semester 4

401 - Geo-informatics and Health Care

1741PGEHE

Course Objectives:

1. To recognize the relationship between healthcare and Geoinformatics
2. To explain the importance of healthcare database for Geoinformatics
3. To apply the GIS technologies for healthcare
4. To analyze spatial and non-spatial data for health care
5. To develop a model for storing spatial data related to healthcare
6. To assess the healthcare models in GIS

Course Outcome:

1. CO 1: Learners will be able to recognize the relationship between healthcare and Geoinformatics (Level :Knowledge)
2. CO 2: Learners will be able to illustrate the importance of healthcare database for Geoinformatics (Level : Comprehension)
3. CO 3: Learners will be able to apply the GIS technologies for healthcare (Level : Application)
4. CO 4: Learners will be able to compute spatial and non-spatial data for health care (Level : Application)
5. CO 5: Learners will be able to develop a model for storing spatial data related to healthcare (Level : Synthesis)
6. CO 6: Learners will be able to assess the healthcare models in GIS- the plume model and the star model (Level : Evaluation)

402- Ecology and Environment

1742PGEEE

Course Objectives:

1. To recognize the basic concepts of ecology
2. To interpret environmental degradation



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3. To discover methods of environmental conservation and sustainability
4. To estimate environmental problems through research
5. To compare between various environmental issues
6. To justify the environmental problems obtained in the research (Global development needs)

Course Outcome:

1. CO 1: Learners will be able to recognize the basic concepts of ecology like ecosystem, energy flow, food chain and major ecosystems (Level : Knowledge)
2. CO 2: Learners will be able to interpret environmental degradation (Level : Comprehension)
3. CO 3: Learners will be able to discover methods of environmental conservation and sustainability (Level : Application)
4. CO 4: Learners will be able to estimate environmental problems through research like in the case of Mumbai Metropolitan Region (Level : Analysis)
5. CO 5: Learners will be able to compare between various environmental issues (Level : Synthesis)
6. CO 6: Learners will be able to justify the environmental problems obtained in the research (Level : Evaluation)

PO CO Mapping Matrix

Semester	Subject	Course Code	PO1	PO2	PO3	PO4	PO5	PO6
Semester 1	Principles of Geomorphology	1611PGEFG	*					
	Principles of Climatology	1612PGEP	*					
	Perspectives in Human Geography	1613PGESP		*	*			
	Spatial Organisation of Economic Activities	1614PGEEA		*	*			



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	Tools and Techniques of Spatial Analysis - I	1615PGESA						*	
	Tools and Techniques of Spatial Analysis- II	1616PGESA						*	
Semester 2	Oceanography and Hydrology	1621PGEOH	*						*
	Geoinformatics	1622PGEIF				*			
	Socio-cultural and Political Geography	1623PGCEP		*	*				
	Urban Geography	1624PGEUG			*				
	Tools and Techniques of Spatial Analysis - III	1625PGESA					*	*	
	Tools and Techniques of Spatial Analysis- IV	1626PGESA						*	
Semester 3	Research Methodology in Geography	1731PGERM	*					*	
	Climatology of Tropics	1732PGECT	*						*
	Geography of South Asia with Special Reference to India	1733PGESA		*	*				
	Tools and Techniques of Spatial Analysis - V	1734PGETT						*	
	Tools and Techniques of Spatial Analysis- VI	1735PGETT						*	



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Semester 4	Geo-informatics and Health Care	1741PGEHE	*			*		
	Ecology and Environment	1742PGEEE					*	*
	Dissertation	1743PGED	*	*	*	*	*	*